IN THE CLAIMS:

1. (Original) A method for creating and maintaining a plurality of virtual servers within a server, the method comprising the steps of:

partitioning resources of the server to establish an instance of each virtual server; and

enabling controlled access to the resources using logical boundary checks and security interpretations of those resources within the server.

2. (Original) The method of Claim 1 wherein the step of partitioning comprises the steps of:

allocating dedicated resources of the server to each instance of the virtual server; and

sharing common resources of the server among all of the virtual servers.

3. (Original) The method of Claim 2 wherein the dedicated resources are units of storage and network addresses of network interfaces of the server.

4. (Original) The method of Claim 3 wherein the common resources are an operating system and a file system of the server.

5. (Original) The method of Claim 4 wherein the server is a filer and wherein the virtual servers are virtual filers (vfilers).

6. (Currently Amended) ~~The method of Claim 5 wherein the step of enabling comprises the step of~~ A method for creating and maintaining a plurality of virtual servers within a server, the method comprising the steps of:

partitioning resources of the server to establish an instance of each virtual server by allocating units of storage and network addresses of network interfaces of the server to each instance of the virtual server, and sharing an operating system and a file system of the server among all of the virtual servers;

enabling controlled access to the resources using logical boundary checks and security interpretations of those resources within the server; and

providing a vfiler context structure including information pertaining to a security domain of the vfiler.

7. (Original) The method of Claim 6 wherein the step of allocating comprises the step of providing a vfstore list of the vfiler context structure, the vstore list comprising pointers to vfstore soft objects, each having a pointer that references a path to a unit of storage allocated to the vfiler.

8. (Original) The method of Claim 7 wherein the step of allocating further comprises the step of providing a vfnet list of the vfiler context structure, the vfnet list comprising pointers to vfnet soft objects, each having a pointer that references an interface address data structure representing a network address assigned to the vfiler.

9. (Original) The method of Claim 8 wherein the step of enabling further comprises the step of performing a vfiler boundary check to verify that a vfiler is allowed to access certain storage resources of the filer.

10. (Original) The method of Claim 9 wherein the step of performing comprises the step of validating a file system identifier and qtree identifier associated with the units of storage.

11. (Original) The method of Claim 10 wherein the step of performing further comprises the steps of:

for each request to access a unit of storage, using the identifiers to determine whether the vfiler is authorized to access the unit of storage;

if the vfiler is not authorized to access the requested unit of storage, immediately denying the request;

otherwise, allowing the request; and

generating file system operations to process the request.

12. (Original) A system adapted to create and maintain a plurality of virtual servers within a server, the system comprising:

storage media configured to store information as units of storage resources, the units of storage resources allocated among each of the virtual servers;

network interfaces assigned one or more network address resources, the network address resources allocated among each of the virtual servers;

an operating system having a file system resource adapted to perform a boundary check to verify that a request is allowed to access to certain units of storage resources on the storage media, each virtual server allowed shared access to the file system; and

a processing element coupled to the network interfaces and storage media, and configured to execute the operating and file systems to thereby invoke network and storage access operations in accordance with results of the boundary check of the file system.

13. (Currently Amended) ~~The system of Claim 12 further comprising~~ A system adapted to create and maintain a plurality of virtual servers within a server, the system comprising:

storage media configured to store information as units of storage resources, the units of storage resources allocated among each of the virtual servers;

network interfaces assigned one or more network address resources, the network address resources allocated among each of the virtual servers;

an operating system having a file system resource adapted to perform a boundary check to verify that a request is allowed to access to certain units of storage resources on the storage media, each virtual server allowed shared access to the file system;

a context data structure provided to each virtual server, the context data structure including information pertaining to a security domain of the virtual server that enforces controlled access to the allocated and shared resources; and

a processing element coupled to the network interfaces and storage media, and configured to execute the operating and file systems to thereby invoke network and storage access operations in accordance with results of the boundary check of the file system.

14. (Original) The system of Claim 13 wherein the units of storage resources are volumes and qtrees.

15. (Original) The system of Claim 14 further comprising a plurality of table data structures accessed by the processing element to implement the boundary check, the table data structures including a first table having a plurality of first entries, each associated with a virtual server and accessed by a file system identifier (fsid) functioning as a first key into the table, each first entry of the first table denoting a virtual server that completely owns a volume identified by the fsid.

16. (Original) The system of Claim 15 wherein the table data structures further include a second table having a plurality of second entries, each associated with a virtual server and accessed by a second key consisting of an fsid and a qtree identifier (qtreeid), each second entry of the second table denoting a virtual server that completely owns a qtree identified by the fsid and qtreeid.

17. (Original) The system of Claim 16 wherein the server is a filer and wherein the virtual servers are virtual filers.

18. (Original) Apparatus adapted to create and maintain a plurality of virtual filers (vfilers) within a filer, the apparatus comprising:

means for allocating dedicated resources of the filer to each vfiler;

means for sharing common resources of the filer among all of the vfilers; and

means for enabling controlled access to the dedicated and shared resources using logical boundary checks and security interpretations of those resources within the server.

19. (Original) The apparatus of Claim 18 wherein the means for enabling comprises means for performing a vfiler boundary check to verify that a vfiler is allowed to access certain dedicated resources of the filer.

20. (Currently Amended) ~~The apparatus of Claim 18 wherein the means for enabling comprises means~~ Apparatus adapted to create and maintain a plurality of virtual filers (vfilers) within a filer, the apparatus comprising:

means for allocating dedicated resources of the filer to each vfiler;

means for sharing common resources of the filer among all of the vfilers; and

means for enabling controlled access to the dedicated and shared resources using logical boundary checks and security interpretations of those resources within the server and for providing a vfiler context structure including information pertaining to a security domain of the vfiler.

21. (Original) A computer readable medium containing executable program instructions for creating and maintaining a plurality of virtual filers (vfilers) within a filer, the executable program instructions comprising program instructions for:

allocating dedicated resources of the filer to each vfiler;

sharing common resources of the filer among all of the vfilers; and

~~enforcing~~ enabling access to the dedicated and shared resources using logical boundary checks and security interpretations of those resources within the server.

22. (Original) The computer readable medium of Claim 21 wherein the program instruction for enabling comprises a program instruction for performing a vfiler boundary check to verify that a vfiler is allowed to access certain dedicated resources of the filer.

23. (Currently Amended) ~~The computer readable medium of Claim 21 wherein the program instruction for enabling comprises a program instruction for~~ A computer readable medium containing executable program instructions for creating and maintaining a plurality of virtual filers (vfilers) within a filer, the executable program instructions comprising program instructions for:

allocating dedicated resources of the filer to each vfiler;

sharing common resources of the filer among all of the vfilers; and

enabling access to the dedicated and shared resources using logical boundary checks and security interpretations of those resources within the server and providing a vfiler context structure including information pertaining to a security domain of the vfiler.

Please add New Claims 24 *et seq.*

24. (New) Electromagnetic signals propagating on a computer network containing executable program instructions for creating and maintaining a plurality of virtual filers (vfilers) within a filer, the executable program instructions comprising program instructions for:

allocating dedicated resources of the filer to each vfiler;

sharing common resources of the filer among all of the vfilers; and

enabling access to the dedicated and shared resources using logical boundary checks and security interpretations of those resources within the server.

25. (New) Electromagnetic signals propagating on a computer network containing executable program instructions for creating and maintaining a plurality of virtual filers (vfilers) within a filer, the executable program instructions comprising program instructions for:

allocating dedicated resources of the filer to each vfiler;

sharing common resources of the filer among all of the vfilers; and

enabling access to the dedicated and shared resources using logical boundary checks and security interpretations of those resources within the server and providing a vfiler context structure including information pertaining to a security domain of the vfiler.